

**Stockton Deep Water Ship Channel (DWSC)
Demonstration Dissolved Oxygen Aeration Facility
July 2010 Monthly Report**

This report includes monthly plots for the Stockton Deep Water Ship Channel (DWSC) Demonstration Dissolved Oxygen (DO) Aeration Facility remote monitoring stations (Navigation Aid (NA) 40, 42, 43 and 48), handheld instrument data, California Data Exchange Center (CDEC) Rough and Ready Island (RRI) station data, and CDEC San Joaquin River at Garwood Bridge (SJG) station data for the month of July 2010. All reported data is provisional and subject to change.

Summary:

The Aeration Facility was operated from July 26th through July 30th for operational testing. The testing involved running one of the two pumps and discharging dissolved oxygen (DO) in the mid-30 mg/L range into the DWSC to monitor system efficiency and effectiveness.

The average monthly DO levels at all monitoring stations for July were above the California Regional Water Quality Control Board (RWQCB) San Joaquin River Basin Plan minimum water quality objective for DO of 5.0 mg/L from December 1st through August 31st. July's monthly average DO concentrations ranged from approximately 5.79 mg/L at NA43 to 6.15 mg/L at NA42.

Minimum 15-minute DO concentrations recorded for all monitoring stations were below the 5.0 mg/L minimum water quality objective (see Table1). The first DO reading below 5.0 mg/l for 2010 at RRI occurred on July 21st.

The monthly average remote monitoring station DO concentrations were within -0.20 to 0.15 mg/L of the RRI station data. There is no substantial difference between the DO measurements recorded with the handheld instrument and the remote stations. The monthly average handheld measured DO (at 12 foot depth) and the remote monitoring stations DO values were within -0.30 to 0.08 mg/L of each other.

The average monthly water temperature increased 6.3° Fahrenheit (°F) from 71.5°F last month in June to 77.8°F in July.

The July monthly average SJG flow was 375 cubic feet per second (cfs). The monthly average flow decreased 831 cfs from the June monthly average flow of 1,206 cfs.

Figures 1, 2, 3, and 4, and Tables 1 and 2 below present a summary of monthly data, and illustrates the discussion topics above.

Figure 1

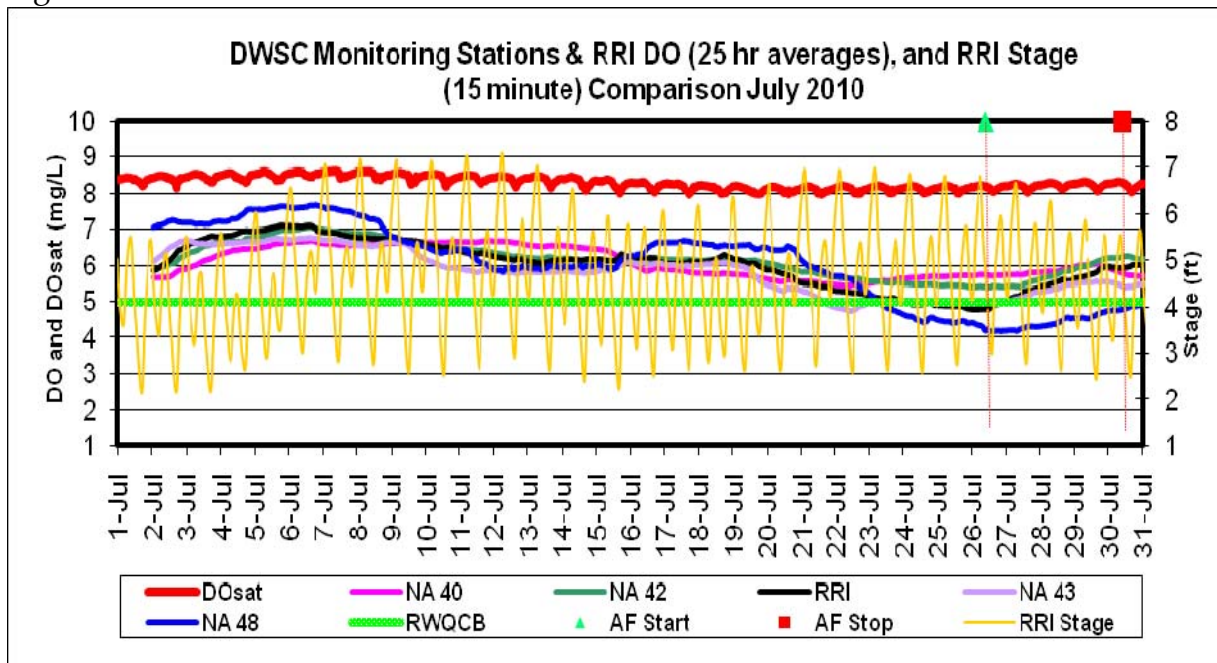


Figure 2

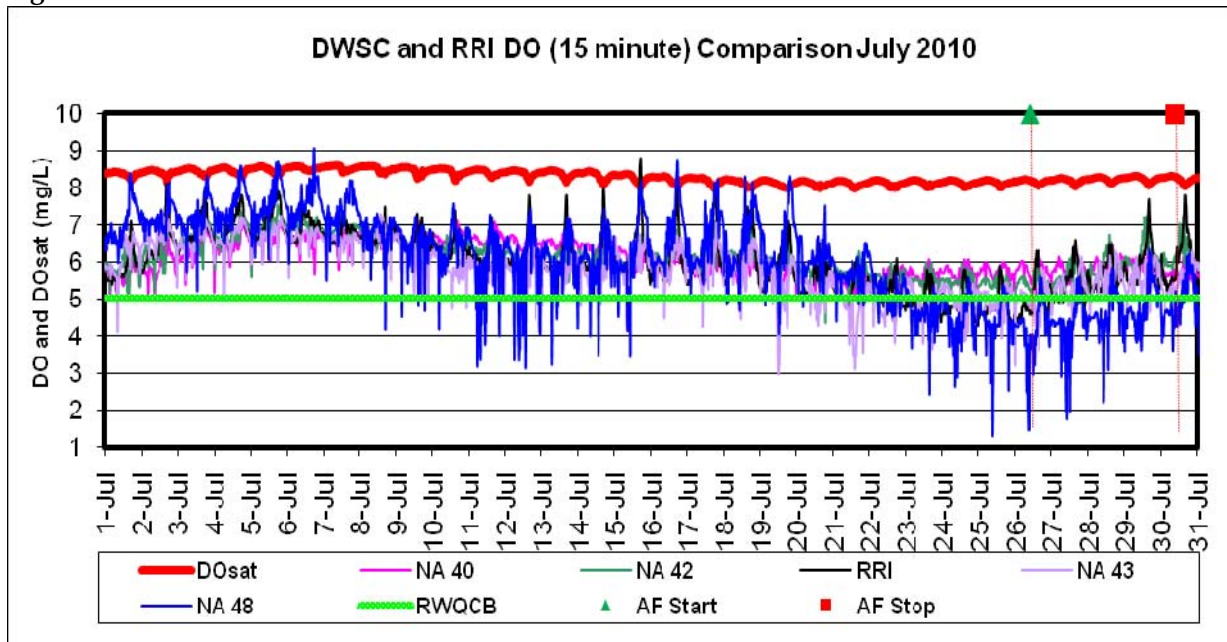


Figure 3

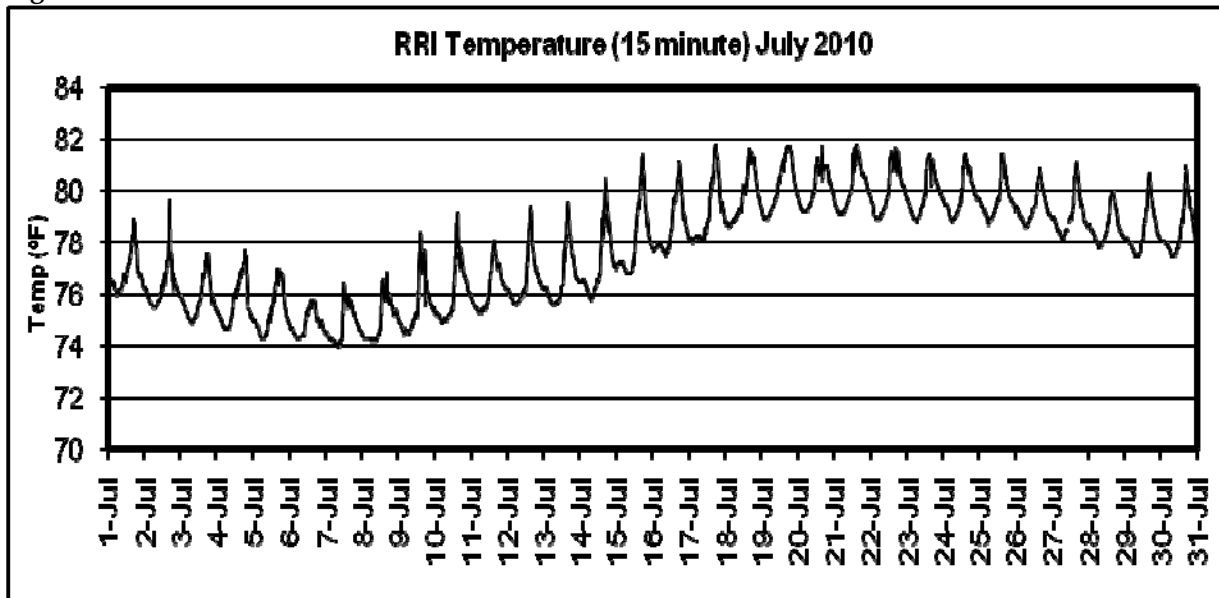


Figure 4

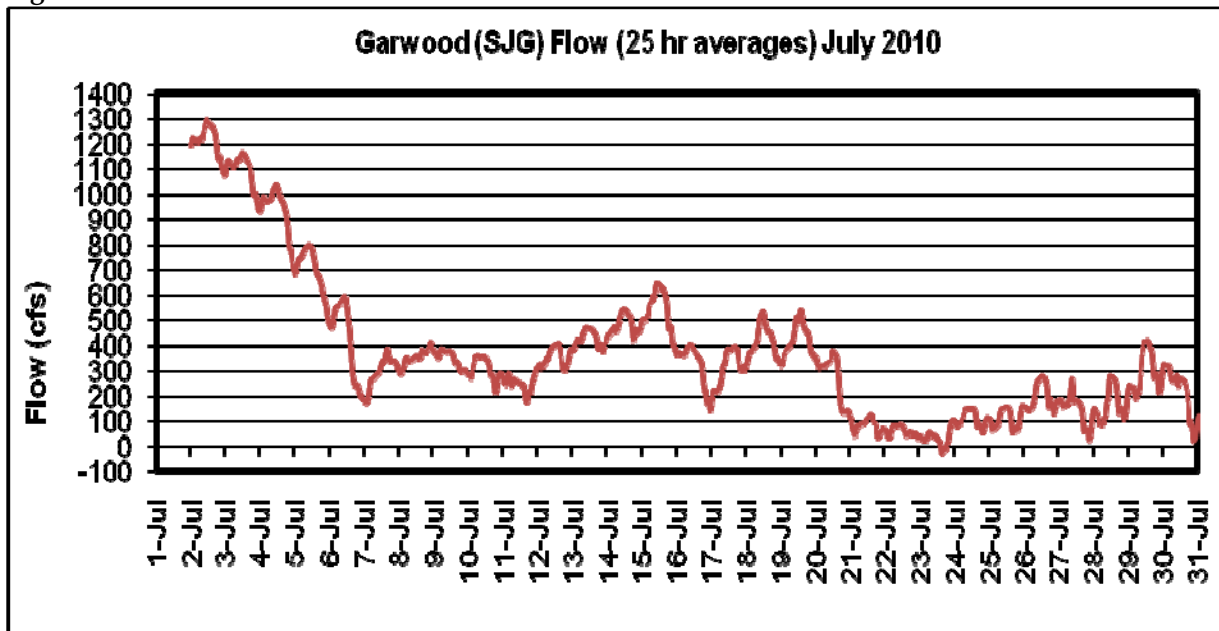


Table 1

YSI Remote Stations and RRI DO ¹ (mg/L) & Temp ¹ (°F)						
Jul-2010						
	RRI ² DO (mg/L)	NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)	RRI Temp (°F)
Monthly DO & Temp Averages	5.99	6.07	6.15	5.79	5.99	77.8
NA Stations and RRI Monthly Average Difference		0.07	0.15	-0.20	0.00	
Monthly Min DO	4.30	4.70	4.40	2.99	1.37	
Monthly Max DO	8.80	7.17	7.55	7.34	9.05	
Monthly DO STDEV	0.78	0.47	0.51	0.69	1.23	
Monthly DO Median	6.00	5.97	6.13	5.81	6.08	

¹Z-Score outlier test was applied to remove anomalous recorded values.

²RRI DO data is from 3 foot depth. NA DO data is from 12 foot depth except NA48. NA48 DO data is from 9 foot depth starting July 24th, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Jul-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly ³ Averages		5.99	6.22	6.09	6.13
NA Stations and Handheld Monthly Average Difference		0.08	-0.07	-0.30	-0.14

³Handheld monthly averages are based on the average weekly readings for the month

Additional Aeration Facility Associated Information:

DWSC Aeration Facility Operation

The Aeration Facility was briefly operated without oxygen for a routine monthly system inspection on July 16th.

The Aeration Facility was briefly operated with oxygen on July 6th, 7th, 8th, and 20th for operational testing to study system efficiency.

The Aeration Facility was operated from July 26th through July 30th for operational testing to monitor system efficiency and effectiveness.

DWSC Water Quality Stations Maintenance/Calibration

The North Central Region (NCR) Water Quality Evaluation Section serviced the four remote monitoring stations (NA40, 42, 43, and 48) in the DWSC on July 1st, 8th, 15th, 22nd, and 29th.

Head of Old River Barrier Status

None

Port of Stockton Dredging Activity

None

San Joaquin River Flow Changes

None

Port of Stockton Dock 19/20 Ship Activity

Days	Arrival	Departure
4	07/06/10	07/09/10
5	07/20/10	07/24/10

Please provide your feedback concerning our observations as well as your independent observations.